Amendments of the Claims:

A detailed listing of all claims in the application is presented below. This listing of claims will replace all prior versions, and listings, of claims in the application. All claims being currently amended are submitted with markings to indicate the changes that have been made relative to immediate prior version of the claims. The changes in any amended claim are being shown by strikethrough (for deleted matter) or underlined (for added matter).

1. (Currently Amended) A method of producing parts from powdered metal comprising the steps of:

a) providing a metallurgic powder ~~comprising iron, 0.3-1.0 weight percent carbon, 0-4.0 weight percent chromium, 0-3.0 weight percent copper, 0.5-1.5 weight percent molybdenum, 0.5-4.5 weight percent nickel, 0-1.0 weight percent manganese, and 0-1.5 weight percent silicon, the weight percentages calculated based on the total weight of the powder~~;

b) compressing the metallurgic powder at a pressure of 30 to 65 tons per square inch to provide a compact;

c) heating the compact to 1400 °F to 2000 °F for 20 to 60 minutes;

d) cooling the compact at a rate of 10 °F to 120 °F per minute;

e) grinding the compact to produce a detailed surface geometry;

f) heating the compact to 2000 °F to 2400 °F for 20 to 80 minutes; ~~and~~

g) cooling the compact at a rate of 120 °F to 450 °F per minute; and

h) heating the compact to 300 °F to 1000 °F for 30 to 90 minutes.

2. (Original) The method of claim 1, wherein the parts are sprockets.

3. (Original) The method of claim 2, wherein the sprockets have a tooth density of 6.7 g/cc to 7.2 g/cc.

4. (Original) The method of claim 1, wherein the metallurgic powder is compressed in step b) to produce a compact with a density of 6.5 g/cc to 7.25 g/cc.

5. (Original) The method of claim 1, wherein the compact is cooled in step d) to produce predominantly Pearlite, Ferrite + Pearlite, or Bainite microstructures.

6. (Original) The method of claim 1, wherein the grinding in step d) is form grinding or profile grinding.

7. (Currently Amended) The method of claim 1, wherein the compact is ground in step e) to produce a surface geometry selected from the group consisting of ~~sawtoothed~~ multiple rows of teeth, and undercut~~, and tapered~~.

8. Cancelled.

9. (Currently Amended) The method of claim ~~8~~ 1, wherein the produced compact is a tempered compact with a microstructure of greater than 90% Martensite, ~~0 to 3%~~ and small amounts of Pearlite, bainite, and ~~less than 7%~~ retained Austenite.

10. (Currently Amended) A method of producing parts from powdered metal comprising the steps of:

a) providing a metallurgic powder ~~comprising iron, 0.8 weight percent carbon, 2.0 weight percent copper, 1.25 weight percent molybdenum, 1.4 weight percent nickel, and 0.42 weight percent manganese, the weight percentages calculated based on the total weight of the powder~~;

b) compressing the metallurgic powder at a pressure of 45 tons per square inch to provide a compact;

c) heating the compact to 1650 °F for 30 minutes;

d) cooling the compact at a rate of 25 °F per minute;

e) grinding the compact to produce two rows of teeth with a groove in between the two rows;

f) heating the compact to 2070 °F for 30 minutes; and

g) cooling the compact at a rate of 150 °F per minute.

11. (Original) The method of claim 10, wherein the parts are sprockets.

12. (New) The method of claim 1, wherein the metallurgic powder comprises iron, 0.3-1.0 weight percent carbon, 0-4.0 weight percent chromium, 0-3.0 weight percent copper, 0.5-1.5 weight percent molybdenum, 0.5-4.5 weight percent nickel, 0-1.0 weight percent manganese, and 0-1.5 weight percent silicon, the weight percentages calculated based on the total weight of the powder.

13. (New) The method of claim 10, wherein the metallurgic powder comprises iron, 0.8 weight percent carbon, 2.0 weight percent copper, 1.25 weight percent molybdenum, 1.4 weight percent nickel, and 0.42 weight percent manganese, the weight percentages calculated based on the total weight of the powder.

14. (New) A method of producing parts from powdered metal comprising the steps of:

a) providing a metallurgic powder;

b) compressing the metallurgic powder at a pressure of 30 to 65 tons per square inch to provide a compact;

c) heating the compact to 1400 °F to 2000 °F for 20 to 60 minutes;

d) cooling the compact at a rate of 10 °F to 120 °F per minute;

e) grinding the compact to produce a detailed surface geometry without substantial densification;

f) heating the compact to 2000 °F to 2400 °F for 20 to 80 minutes;

g) cooling the compact at a rate of 120 °F to 450 °F per minute; and

h) heating the compact to 300 °F to 1000 °F for 30 to 90 minutes.

15. (New) The method of claim 14, wherein the parts are sprockets.

16. (New) The method of claim 15, wherein the sprockets have a tooth density of 6.7 g/cc to 7.2 g/cc.

17. (New) The method of claim 14, wherein the metallurgic powder is compressed in step b) to produce a compact with a density of 6.5 g/cc to 7.25 g/cc.

18. (New) The method of claim 14, wherein the compact is cooled in step d) to produce predominantly Pearlite, Ferrite + Pearlite, or Bainite microstructures.

19. (New) The method of claim 14, wherein the grinding in step d) is form grinding or profile grinding.

20. (New) The method of claim 14, wherein the compact is ground in step e) to produce a surface geometry selected from the group consisting of multiple rows of teeth and undercut.

21. (New) The method of claim 14, wherein the produced compact is a tempered compact with a microstructure of greater than 90% Martensite, and small amounts of Pearlite, Bainite, and retained Austenite.

22. (New) A sprocket with detailed surface geometry of two rows of teeth with a groove in between the two rows made by a method comprising the steps of:

a) providing a metallurgic powder;

b) compressing the metallurgic powder at a pressure of 30 to 65 tons per square inch to provide a compact;

c) heating the compact to 1400 °F to 2000 °F for 20 to 60 minutes;

d) cooling the compact at a rate of 10 °F to 120 °F per minute;

e) grinding the compact to produce the detailed surface geometry of two rows of teeth with a groove in between the two rows without substantial densification;

f) heating the compact to 2000 °F to 2400 °F for 20 to 80 minutes; and

g) cooling the compact at a rate of 120 °F to 450 °F per minute.

23. (New) The sprocket of claim 22, wherein the grinding is form grinding or profile grinding.